DOCUMENT RESUME

ED 253 524 SP 025 804

AUTHOR Auer, Carol A.
TITLE An Annotated Bibliography of Current Literature and Materials Dealing with the Importance and the Teaching of Nutrition Education for the Pregnant Adolescent.
PUB DATE Apr 84
NOTE 39p.
PUB TYPE Reference Materials - Bibliographies (131) -- Information Analyses (070)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Adolescents; Annotated Bibliographies; *Dietetics; Early Parenthood; Eating Habits; *Health Education; Infant Mortality; *Nutrition Instruction; *Pregnancy; Secondary Education; Teaching Methods

ABSTRACT

This bibliography of current writings on the topic of nutrition for the pregnant adolescent presents information in the areas of: (1) the importance of nutrition for the pregnant adolescent; (2) the what, when, and where of teaching nutrition; (3) techniques of teaching nutrition education; (4) special programs with nutrition education for the pregnant adolescent; and (5) evaluation of nutrition education. Each citation is accompanied by a brief abstract. (JD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED253524

AN ANNOTATED BIBLIOGRAPHY OF CURRENT LITERATURE AND MATERIALS DEALING WITH THE IMPORTANCE AND THE TEACHING OF NUTRITION EDUCATION FOR THE PREGNANT ADOLESCENT

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Carol A. Auer
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

BY

CAROL A. AUER

Study Directed

by

Charles R. DuVall, Ph.D.

Submitted in partial fulfillment of the requirements
for the couse S591 -- Exit Project
April, 1984

SP025804

TABLE OF CONTENTS

Page

INTRODUCTION 1

Statement of the Problem 3

Purpose of the Study 4

Organization of the Study 4

Definitions for Reference in Study 5

ANNOTATIONS 6

The Importance of Nutrition 6

What, When and Where of Teaching Nutrition 12

Techniques of Teaching Nutrition Education 20

Special Programs with Nutrition Education 24

Evaluation of Nutrition Education 27

SUMMARY 29

CONCLUSIONS 31

BIBLIOGRAPHY 32

INTRODUCTION

Is teenage pregnancy a prevalent problem? According to statistics printed by Planned Parenthood and the March of Dimes, four in ten girls will become pregnant before they are twenty years old, and two-thirds of them unintentionally. Some 560,000 teenage girls give birth each year. Statistics from Alan Guttmacher Institute, 1981, state that teenagers represent only eighteen percent of sexually active women capable of becoming pregnant, yet they account for forty-six percent of all illegitimate births and thirty-one percent of all abortions.

"There is no benefit to the society from adolescent childbearing." In fact, it is costly in many respects, such as the direct expenditures for health and social services and in the loss of economic contributions. (Guttmacher Institute, 1981:3)

The health risks for the teenage mother are both physical and emotional. There is a higher death rate from pregnancy complications among girls who give birth under the age of fifteen and the girls are more apt to be undernourished and suffer from premature or prolonged labor. (March of Dimes, 1983) Planned Parenthood states that complications of pregnancy which result in death are thirty-five percent higher among girls fifteen to nineteen years of age than for women over nineteen; under the age of fifteen, this rate is sixty percent higher than that of adult women.

The most immediate problem for the infants of teenage mothers is low birth weight. Irrespective of race or marital status, teenagers have a greater percentage of low birth weight infants than do

adult women. Infants born too small or too soon can suffer from a variety of problems--immature organ systems, problems controlling body temperature and blood sugar levels, mental retardation, and a higher risk of death in infancy. (Frischano, 1983)

Another immediate health risk for infants born to adolescents is "infant mortality." The infant mortality rate for babies born to teenage mothers is almost twice that of babies born to mothers in their twenties. (Planned Parenthood, n.d.) The infant mortality rates in the United States have not decreased as much as those of some other western nations and these rates are particularly high among infants born to young mothers. (Wallace, 1982)

Along with the health problems associated with adolescent pregnancies, there are several social factors involved. Seventy to eighty percent of the women who have children at age seventeen or younger do not finish high school, which limits their employability. Teenage marriages have a greater chance of ending in divorce. These situations indicated possible dependence on public assistance. (Planned Parenthood, n.d.)

STATEMENT OF THE PROBLEM

"Nutrition is one of the most important considerations in the health of the teen-age girl." (Huyck, 1976:60) Proper nutrition during and before pregnancy is important to both mother and infant. Adolescent growth and pregnancy consitute competing demands for nutrients; the results of this competition can be detrimental to both mother and infant. The nutritional requirements during adolescence are greater in relation to body size than at any other time in development except infancy. At the same time, the fetus depends on the mother's diet to provide building materials for its growth. Researchers have concluded that "as many as one million pregnant women may suffer from malnutrition serious enough to endanger their babies." (Lee, 1977:144)

Studies have shown that lack of adequate nutrition can have an effect on a child's subsequent learning ability. With the recent trend toward fewer children per family, there is now greater concern for the quality of life. Nutrition can be an important determinant in the quality of life for each child. (Hess, 1982:1)

PURPOSE OF THE STUDY

The nutrition educator may be a teacher, a nurse, a nutritionist, a dietician, or some other professional having contact with pregnant adolescents. Whoever the educator might be, the information concerning nutrition needs to be presented to the pregnant adolescent for application in her eating habits. The purpose of this research was to become aware of the importance of nutrition education for the pregnant adolescent and explore the current information, techniques, methods, and evaluations which could assist in the teaching of nutritional information.

ORGANIZATION OF THE STUDY

The research has been organized in this manner: 1) The Importance of Nutrition for the Pregnant Adolescent, 2) What, When and Where of Teaching Nutrition, 3) Techniques of Teaching Nutrition Education, 4) Special Programs with Nutrition Education for the Pregnant Adolescent, and 5) Evaluation. Each section contains the bibliography with annotations that address the topic.

DEFINITIONS IN REFERENCE TO PAPER

ADOLESCENT--period of development from age eleven or twelve through nineteen or twenty years of age

LOW BIRTH WEIGHT--infant birth weight of 2500 grams or less (5 lbs., 8 ozs.)

MENARCHE--the start of menstruation

GYNECOLOGIC AGE--chronologic age minus age at menarche

MATERNAL AGE--age at time of pregnancy

NUTRITIONAL STATUS--dietary condition

INFANT MORTALITY--infant death at birth or up to age two

AGE-SPECIFIC FERTILITY--age at which menarche occurs and pregnancy could occur

THE IMPORTANCE OF NUTRITION FOR THE PREGNANT ADOLESCENT

There is obvious evidence from studies and research that adequate nutrition can reduce complications during pregnancy. Nutrition is important in the development of healthy infants for women and especially important for the adolescent.

Bowering, J.; Lowenberg, R.I.; and Morrison, M.A., "Nutrition Studies of Pregnant Women in East Harlem," American Journal of Clinical Nutrition, September 1980, 33:1987-1996.

A survey was conducted among 346 low-income pregnant women attending a clinic for high risk pregnant women. The objective was to obtain base-line information on nutritional status and to identify problems that the educational programs could address. The method used was a blood test to determine the amount of iron in blood and other chemical analysis. Also, an evaluation of twenty-four hour diet recalls was used. It was discovered that iron-deficient women tend to be younger and came to the clinic later in pregnancy. The diet recalls indicated that before counseling diets were low in all nutrients except protein. It was determined that ethnic background and age may influence both diet and participation in health care and nutrition programs.

Camp, Bonnie W., and others, "Infants of Adolescent Mothers," American Journal of Disease of Children, March 1984, 138:243-246.

The Bayley Scales of Infant Development were administered to one year old infants of adolescent mothers to obtain developmental information. The results indicated a slight but consistent developmental advantage in the first year of life for infants of adolescent mothers compared to infants of older women. However, at age four, the situation was reversed, and children of adolescents showed more developmental and behavioral problems. It was suggested that this could be the result of the tendency of young women to be more extreme or more authoritarian than older counterparts. However, the young mothers lacked the ability to support development after the first year. Some suggested deficiencies in environmental stimulation.

Chilman, Catherine S., Adolescent Pregnancy and Childbearing, United States Department of Health and Human Services, Government Printing Office, Washington, D.C., NIH Publication No. 81-2077, December 1980.

This publication covered many aspects of adolescent pregnancy. It began with many startling facts to emphasize the social and medical concerns involved with this problem. Risk of prematurity was cited as the most important medical aspect of teenage pregnancy. Premature infants are at great risk, with a higher neonatal mortality rate and greater chance for handicapping conditions. It was noted that in spite of all the research concerning age and nutrition of pregnant teenagers, today's literature views the social rather than the medical problems as the main concern. Chapter Seven contained various tables and charts which illustrated the medical aspects of the increasing birth rate among teenagers.

Eisner, Victor, and others, "The Risk of Low Birthweight," American Journal of Public Health, September, 1979, 69:887-8893.

A study was done using information taken from birth certificates of all single live births in the United States in 1974. The purpose of the study was to analyze the birthweight with several variables. Tables were available to list the findings. The results indicated the greatest risk of low birthweight came from a lack of prenatal care. When maternal age was analyzed, there was a higher risk for those under eighteen years of age and those over thirty-five years of age.

Frischano, A. Roberto; Matos, Jorge; and Flegel, Paz, "Maternal Nutritional Status and Adolescent Pregnancy Outcome," The American Journal of Clinical Nutrition, November, 1983, 38:739-745.

A study was done with a sample of adolescent mothers who gave birth at the Maternity Hospital of Lima, Peru. The purpose of the study was to analyze the correlation of nutritional status, body size, and age to birth weight of offspring. Tables and charts were included for comparison of findings. The results indicated that as maternal age, age of menarche, height, and prepregnancy weight increased on tables, so did the weight of infants at birth. Even when adjustments were made for differences in nutritional status, teenage mothers twelve to sixteen years of age had smaller newborns than older and adult counterparts. Therefore, low birth weight of teenage offsprings cannot be explained on the basis of premature delivery or short gestation. It was indicated that the needs of the adolescent compete with the growth needs of the fetus for the available nutrients and, in order to compensate, the teenager should be expected to gain more weight than older women.

Garn, Stanley M. and LaVelle, Marquisa, "Reproductive Histories of Low Weight Girls and Women," The Journal of Clinical Nutrition, May 1983, 37:862-866.

An investigation based on menarcheal status, weight, stature, and reproductive histories was done to see if low body weight (104 pounds or less) had any effect. The data used was taken from various sources, locations, and racial or ethnic groups. The results indicated that low body weights may be a delaying factor but do not prevent the attainment of sexual maturity. Also, the survey of three populations proved that low body weight was not a barrier for conception and no particular deterrent to repeated pregnancies. These findings did not contradict the implications that nutritional status affects the timing of menarche. Studies did show that fatter children of either sex do mature sexually earlier than lean children. However, malnutrition can interrupt the menstrual cycle, and low maternal weight leads to a lower birth weight no matter what the age of the mother.

Iams, Jay D., Being Well Born: Preventive Health Practices in Pregnancy and Delivery, Educational Resources Information Center, ED 214 631, 1982.

Described in this work were several of the major developments in reproductive biology and medicine during the 1970's. It also outlined some of the areas for research in the 1980's. Some of these included: 1)the importance of bonding and methods used to improve bonding, 2) new drugs to aid premature births and needed research, and 3) new technology such as ultrasound. Adolescent pregnancy programs were identified as having social as well as medical problems. The programs have discovered two principal lessons: 1)prevention of adolescent pregnancy was most ideal, and 2)when adolescents are pregnant, early and regular prenatal care provided the best outcome. Public and research community agreed that good nutrition was essential to a healthy pregnancy and environmental influences are of great concern in this area.

Lee, Essie E., "Food Fads, Nutrition and Teenage Mothers," Childhood Education, January 1977, 53:143-146.

Lee identified the problem of food fads that are prevalent among adolescents and the effects they can have on the pregnant teenager. Health and nutrition educators were warned to consider the nutritive value of food instead of stereotyping foods for certain times of the day. Urbanization and technological development were identified as partly responsible for new eating habits, as well as the following factors: 1) working parents, 2) adolescents having part-time jobs, 3) teenagers are prone to fads, 4) younger independence, 5) society's pressure to keep figures small, 6) limited cooking skills, 7) crowded schedules, 8) lack of concern about nutrition, and 9) using food to fulfill psychological, social and emotional needs. Educators need to consider these points in changing poor nutritional habits: 1) difficulty of change, 2) family income, 3) available food programs, 4) possible lunch or breakfast programs in schools, and 5) nutritional snacks from fast food. The author stressed that it would be less costly in lives and money if preventive measures were taken now against poor nutrition for the adolescent.

Nye, F. Ivan, School-Age Parenthood: Consequences for Babies, Mothers, Fathers, Grandparents, and Others, Extension Bulletin 667, Cooperative Extension Service, Washington State University, 1977.

Discussed in this study was the effect of pregnant adolescents on their babies, themselves, the fathers, the grandparents, and society and the government. Also discussed were decisions concerning parenthood and preventing schoolage parenthood. The main objective was to provide some basic facts concerning the problem.

Stuart, Irving R., and Wells, Carl F., Pregnancy in Adolescence: Needs, Problems, and Management, Van Nostrand Reinhold Company, New York, NY, 1982, pp. 66-68, 70-72.

In this section of the book, the authors stressed the fact that the pregnant teenagers do not get the proper prenatal care they need. Teens do not seek prenatal care until late and are not good at keeping appointments. It was suggested that professions dealing with the pregnant teen work together. Nutrition was stressed as the most difficult and important aspect of on-going care for the pregnant adolescent. Many factors affect her eating habits, such as: 1) lack of cooking skills, 2) parents' interest or lack of interest, 3) boyfriend thinks she is getting too fat, and 4) teen habit of skipping meals. Nutritionists should consider these factors and try to structure food patterns with foods that the teen will eat. Also, remember to praise teen's effort to improve diet and use positive reinforcement.

Teen-age Pregnancy: The Problem That Hasn't Gone Away, The Alan Guttmacher Institute, New York, NY, 1981, 80 pp.

This was an assembly of facts and knowledge summarized in charts and graphs concerning: 1) sexual activity and marriage, 2) contraceptive use, 3) teenage pregnancy and its resolution, 4) adolescent birth, 5) consequences of teenage childbearing, 6) sex education, 7) family planning services, 8) contraceptive research, 9) abortion services, 10) services to pregnant teenagers and 11) adolescent parents and their babies.

This work provided information to help understand the nature of the problem and some things that are being done; it also presents needs that are still unmet and the kinds of efforts that still need to be made.

Wallace, Helen M.; Weeks, John; and Medina, Antonio, "Services for Pregnant Teenagers in the Larger Cities of the United States, 1970-1980," JAMA, November 12, 1982, 248:2270-2273.

This was the report of findings from the third national survey of services available for pregnant teenagers and comparing with the first and second surveys.

It was reported that 85% of the 127 cities did have at least one kind of service available for the teenager. However, this percentage had remained unchanged since the first survey in 1970. Voluntary agencies have declined and public agencies have increased. There was an increase in services of pregnancy testing, contraception, special education, and nutrition services. Nutrition services were reported as being available in 96% of the cities and 83% reported nutrition services for infants.

It was noted that there was a need for improvement and extension of services for the pregnant teenager and that the most frequently mentioned unmet need was day care for infants.

Working Group on Nutrition and Pregnancy in Adolescence, "Relation of Nutrition to Pregnancy in Adolescence," Clinical Obstectrics and Gynecology, June 1971, pp. 367-392.

Due to the problem of increased number of pregnant adolescents each year, the Committee on Maternal Nutrition asked this group to explore the "nature and magnitude of the biologic and social problems accompanying pregnancy and childbirth in adolescent girls." (p. 367) This article was the result of their research.

It contained good definitions of the adolescent in regard to age-specific fertility, age at menarche, growth and maturation, and obstetric behavior. It was mentioned that the lowered age for menarche over the past decades was due to better nutritional habits.

This report stressed the importance of nutritional status for the adolescent and referred to it as an "important determinant of reproductive efficiency." (p. 391)

The results from a study of two groups of pregnant teenagers indicated that nutritional habits acquired throughout childhood will play a large part in nutritional status during pregnancy.

BEST COPY AVAILABLE

Zlatnik, Frank J. and Burmeister, Leon F., "Low 'Gynecologic Age': An Obstetric Risk Factor," American Journal of Obstetrics and Gynecology, May 1977, 128:183-186.

Records were kept for three years at the University of Iowa Hospitals to study the correlation of chronologic age and gynecologic age (GA) to the risk of delivery of a low birth weight infant. The article presented several tables and charts to show the comparison. The results indicated that low GA tends to increase the risk of delivery of low birth weight infants more than chronologic age does. There was no evidence of differences in delivery birth weights due to race, economic status, or marital status. However, it was mentioned that the representatives for a study of this sort are usually the most culturally and socioeconomically disadvantaged. It was also mentioned that "the growth spurt usually occurs prior to menarche, and linear growth is not complete until four years after menarche." (p.185) Therefore, the nutritional requirements for both chronological and gynecological age need to be considered in a teenage pregnancy.

BEST COPY AVAILABLE

WHAT, WHEN, AND WHERE OF TEACHING NUTRITION

Even if an adolescent has a poor self-image, she still wants to produce a healthy baby. Nutrition educators can help her if they know what things are essential for her to know, when the best time for this education might be, and where this can be taught in order to have best effect on dietary behavior.

Anderson, Marcy L.F.; Olson, Christine M.; and Rhodes, K., "Development and Pilot Testing of a Tool for Evaluating Printed Materials," Journal of Nutrition Education, 1980, 12:50-54.

This article described the development of a tool for evaluating printed prenatal nutrition material that was used in programs for pregnant adolescents. The tools was to evaluate readability, stereotyping, instructional aids, format, and content of printed nutrition education materials.

It was determined that nutrition educators use printed materials for a variety of reasons: 1) reinforcement of information presented in another manner, 2) presentation of new information, 3) client motivation, and 4) review of information already presented. The reasons given for recommeding materials were ease of reading, availability, format appeal, and content addressed to the pregnant teenager.

Eppright, Ercel; Pattison, Mattie; and Barbour, Helen, Teaching Nutrition, Iowa State University Press, Ames, Iowa, 1978, 345 pp.

This was a good textbook that could be used to educated nutrition educators or be used as a resource book for instructors. It was well written and illustrated. The technical material was somewhat simplified, and it provided working guides and suggestions to help motivate people to develop good eating habits. The illustrations added humor which would be an asset in teaching nutrition.

Gots, Ronald E., and Gots, Barbara A., Caring for Your Unborn Child, Stein and Day, New York, NY, 1977, pp. 59-94.

This chapter on nutrition was divided into two sections: 1) care and feeding of the growing baby, and 2) a guide to daily care for the pregnant woman.

The care and feeding section clarified some misconceptions and contradictory recommendations pertaining to nutrition that are given to pregnant women.

The guide to daily diet section discussed what a well-balanced diet was, along with the recommended required nutrients.

Hess, Mary A., and Hunt, Anne E., Pickles and Ice Cream, McGraw-Hill Book Company, New York, NY, 1982, 256 pp.

Hess and Hunt provided a practical and informative guide to nutrition during pregnancy. Various factors were mentioned that needed to be considered before an assessment of individual needs could be done. The age factor was stressed for teenagers, since their nutritional demands are emphasized and pregnancy creates an additional demand that is hard to meet. Adequate information was provided to lead teenagers to "informed choices" during pregnancy.

Indiana Council on Adolescent Pregnancy, Adolescent Pregnancy and Parenting Services: Indiana Resource Directory, Indianapolis, IN, March 1983.

A directory which described programs in Indiana counties which impact the problems associated with adolescent pregnancy and parenthood in Indiana. It contained a number of programs and services which could serve as models worthy of replication.

Williams, Phyllis S., Nourishing Your Unborn Child, Avon, New York, NY, 1974, 275 pp.

This book was not written to attract the average pregnant teenager; however, it did contain useful information for the nutrition educator. It discussed basic nutrition, conserving nutrients, avoiding hazards, safe and healthy childbearing, and basic daily menus and recipes for the pregnant teenager.

Worthington, Bonnie S.; Vermeersch, Joyce; and Williams, Sue R., Nutrition in Pregnancy and Lactation, The C.V. Mosby Company, Saint Louis, MO, 1977, pp. 119-131.

The book as a whole would be an excellent and useful textbook for the health professional. In Chapter Six, "Nutritional Needs of the Pregnant Adolescent," the authors discussed the problems and needs associated with teenage pregnancies.

The chapter began with an awareness of the increasing number of teenage pregnancies and suggested some possible reasons, including declining maturation, increasing age-specific fertility, and increasing sexual freedom.

The major complication for the young mother was toxemia; the major problem for the infant was noted as low birth weight.

Nutritional needs were stressed for the adolescent, since it is a period of rapid growth requiring a need for more nutrients. It was stated that the best assurance of adequate intake was satisfactory weight gain over the nine months.

The following annotations of educational resources would be valuable in the teaching of nutrition education for the pregnant adolescent.

Am I Pregnant?, The National Foundation March of Dimes, 1978, Set of fifteen 8" by 10" cards.

Described in this set are the first signs and feelings of pregnancy. The cards discuss choices, the need to see a doctor and other factors dealing with pregnancy, including: 1) diet, 2) exercise, 3) changes and challenges in body and lifestyle, 4) some important "if's", and 5) new mother "blues."

All the cards in the sets were in bold, easy to read print and had little cartoon characters added for interest and illustration. These cards would be excellent for making copies for handout or could be used for individualized teaching.

Arnold, Justin, Nutrition: Yesterday, Today, and Tommorow. New Horizons in Nutrition. Educational Resources Information Center, ED 193 186, Kingston, PA, 1980.

This was one of a series of ten packets designed for a nutrition course for secondary students. It discussed the development of food habits in early years and the effect those habits have on one's body, especially during pregnancy. It emphasized that the pregnant mother was developing the nutritional status of the fetus through her eating. It discussed proper nutrition for the infant, the child, the adolescent, and the elderly.

The Bank Street College of Education, Days of Change, The National Foundation March of Dimes, 1978, 32 pp.

This was a booklet written in comic book form; however, it was a serious story rather than a comic one. The story involved a young couple discovering that the girl was pregnant. The booklet dealt with how the couple handled the situation, emphasizing the importance of health care.

The Bank Street College of Education, Inside Your Body, Inside Your Head, The National Foundation March of Dimes, 1978, 32 pp.

The Bank Street College of Education, Food for Thought and Eating, The National Foundation March of Dimes, 1976, 32 pp.

These booklets were designed for the pregnant teenager and contained various activities, cartoons, pictures, and information concerning pregnancy.

All the booklets were very eye-appealing, easy to read, and able to hold the attention of young girls. They gave the needed information in a noneducational form.

The Bank Street College of Education, The Junk Food Blues, The National Foundation March of Dimes, 1978, 32 pp.

This was a booklet consisting of comic strip sections, jokes, and advertisements; the dialogue dealt with general nutrition for the pregnant teenager.

Burrill, Sally L., and Hall, Mary E., Nutrition for a Healthy Pregnancy, Cooperative Extension Service, University of California, (EFNEP 5207), 64 pp.

This booklet was arranged in order to be used as a flip chart, with simple wording and pictures on one page and a little more information concerning the subject on the opposite page. It dealt with all health aspects of pregnancy in simplistic form.

These pages could be used to make transparencies or give suggestions for bulletin boards or posters dealing with health and nutrition for the pregnant teenager.

Cowart, Eileen, and Liston, Walter, For the Young Mother-to-be, Mead Johnson and Company, Evansville, IN, 1978, 20 pp.

In this pamphlet, the use of diagrams, definitions and illustrations explained the following subjects: 1) conception, 2) how an infant grows, 3) health during pregnancy, 4) labor and delivery, 5) involution, and 6) the postpartum period. The terminology was kept simple yet complete and accurate.

This would be an excellent handout for the young pregnant teenager, since it is so simple and yet contains such very pertinent information.

Dohrman, Harriet, You Are Pregnant! Food for Two, Educational Resources Information Center, ED 194 851, Orange, CA, 1980.

This was a workbook designed for pregnant girls in special classes in high school. It could be used in group teaching or it would be an excellent tool for individualized teaching of nutrition. It contained all the necessary nutrition information and was especially designed for the pregnant teen and her baby. It gave the teen a purpose for studying the subject, since the nutrients were explained in relation to pregnancy.

This workbook contained several individual activities as well as review examinations and an answer key.

Fast Food: A Nutrition Survival Guide, The Learning Seed Company, Kildeer, IL, 1981, filmstrip and tape cassette, 66 frames, 15 minutes.

A filmstrip designed to teach wise nutritional selection when eating at fast food franchises, this production stated that eating at a fast food restaurant does not insinuate strictly junk food or the inability to maintain a balanced diet. It provided information needed to select a balanced meal and stressed that it does take some effort.

Various fast foods were evaluated for their nutritional value and recommendations were given to obtain balanced nutrition.

Fast foods are a very prevailing part of a teenage diet. Educators of pregnant teens need to acknowledge this fact and teach girls how to use fast foods in balancing meals.

Food Power, The National Foundation March of Dimes, 1978, Set of fifteen 8" by 10" cards.

These cards described the importance of food and how each nutrient was used for the mother and her baby.

Hemmerich, Cecelia A. and others, Teaching Teens "Stuff" That Counts. A Guide for Volunteers, Educational Resources Information Center, Madison, Wisconsin, ED 092 784, 1973.

This booklet on microfilm was a nutrition instruction guide designed for volunteer leaders in the Expanded Food and Nutrition Education Program (EFNEP). Topics included: 1) weight control, 2) Teenage pregnancy, 3) appearance, 4) nutrition and drugs, 5) fad diets and 6) physical fitness. Suggestions were given to incorporate socialization into nutrition teaching. Suggestions included: teens want 1) to know what they can do rather than what they should or should not do, 2) positive reinforcement, 3) to be involved in planning, doing and evaluating. Lists of activities, games, and other strategies were given to develop positive attitudes toward nutrition as well as learn information.

Inside My Mom: Nutrition During Pregnancy, The Puget Sound Chapter of the National Foundation March of Dimes, Seattle, WA, 1975, set of slides and cassettes.

A slide presentation in which a cartoon fetus was concerned about his mother's diet. The importance of eating proper foods for various developmental stages are expressed as the animated figure complains about the lack of nutritious foods and abundance of junk food. As the filmstrip progressed, the mother improved her food habits and the fetus expressed delight and a desire to remain the full forty weeks.

Lansky, Vicki, Feed Me I'm Yours, Meadowbrook Press, Wayzata, WN, 1974, pp.

Basically, this was an idea and cook book with lots of recipes, ideas, and information to help the young mother know and understand how to feed her new baby. The information was given in consecutive order as to when the infant's needs change and the rationale for it. It contained many helpful tips concerning baby food and all aspects of feeding a toddler.

The last sentence of the introduction summed up the tone of the book. "Be flexible; respect strong dislikes; remember that LOVE IS NOT EQUAL TO THE AMOUNT OF FOOD YOUR CHILD EATS."

Lindsay, Jeanne W., Teens Parenting, The Challenge of Babies and Toddlers, Educational Resources Information Center, ED 203 993, 1981.

This book, on microfilm, was to be used as a parenting guide for teenage parents of infants and toddlers. In Chapter One, pp. 25-27, nutrition during pregnancy is discussed. The book gave a description of the filmstrip "Inside My Mom," actual comments from pregnant teens concerning nutrition and other nutritional information.

Lindsay, Jeanne W., Teens Parenting: The Challenge of Babies and Toddlers Student Study Guide, Educational Resources Information Center, ED 203 995, 1981.

This study guide included questions, a writing assignment, and a list of projects suggested for each chapter of the book. This would be a useful tool for group or individualized instruction. However, the subject of nutrition was only lightly touched in regard to pregnancy, breastfeeding, and toddler feeding.

Lindsay, Jeanne W., They'll Read if it Matters: Study Guides for Books About Pregnancy and Parenting, Educational Resources Information Center, ED 186 121, 1980.

Lindsay developed study guides for various books regarding sex, pregnancy, babies and families. These guides would help students get the important concepts from the books used in educating pregnant teenagers. Books were selected that students could and would read. They have a practical approach to subjects that are relevant to students' interests and lives. Each book and study could be used at individual speed. Lindsay stressed the need to individualize instruction for pregnant students, and the need to incorporate pertinent interest of students into general classroom subjects.

The booklet, "Prenatal Care" and the developed study guide would be an asset in teaching nutrition to pregnant teenagers.

United States Department of Health and Human Services, Food for the Teenager During and After Pregnancy, Superintendent of Documents, United States Government Printing Office, Washington, D.C., Pulication No. (HRSA) 82-5106, 1982, 31 pp.

This pamphlet would be an excellent handout for pregnant teenagers. It was addressed to the teenager with content that was designed to inform. Topics discussed included:

1) Weight--how much, how fast, and where it goes,
2) What to eat--calories, daily amounts of needed nutrients and how they are used,
3) Food groups--examples of foods for each group and explanation of function during pregnancy, and
4) Samples--meal patterns and food plans.

Pages were left at the end of pamphlet for additional notes.

United States Department of Health, Education and Welfare, Food for the Teenager During Pregnancy, Public Health Service, Pamphlet No. (HSA) 78-5106, Washington, D.C.. 1978.

The purpose of this pamphlet was to stress the importance of what the teenager eats during pregnancy and to ensure proper weight gain and a healthy baby. It listed examples of how the various food groups work for the pregnant teenager and for her baby. Each food group was discussed, with the recommended daily amount, a list of examples of food containing the various nutrients, and the purpose of the nutrients. Meal plans were discussed and some sample meal plans detailed for three days. Also, there are light touches on subjects such as morning sickness, cravings, vegetarian diets, anemia, cigarettes, alchohol, drugs and food assistance.

The pamphlet covers the basics of nutrition for the pregnant teenager and would be a good supplement to the nutrition education unit.

Your Month-By-Month Pregnancy Diet, The National Foundation March of Dimes, 1978, set of nine 8" by 10" cards.

Describing what the pregnant girl needs, this set of cards warned against smoking and drinking and emphasized prenatal care. Cartoon characters and captions added interest as well as information.

TECHNIQUES OF TEACHING NUTRITION EDUCATION

Various techniques of teaching nutrition have been attempted. Some prove to be more effective than others. Some techniques increase nutrition knowledge but do not have any effect on dietary habits. In teaching pregnant adolescents, the educator needs to determine the most effective technique in influencing and modifying the adolescent's dietary behavior.

Axelson, Julein M., and Delcampo, Diana S., "Improving Teenagers Nutrition Knowledge Through The Mass Media," Journal of Nutrition Education, January-March 1978, 10:30-33.

This was a description of an experiment conducted in Florida to measure the effectiveness of a mass media approach to disseminating nutrition information.

It was demonstrated that teenagers could be reached and knowledge improved through a short-term mass media promotional campaign, if it had special incentive and personal appeal. However, it was pointed out that knowledge of nutrition is no guarantee of application.

Engen, Harold B.; Vailas, Laura I.; and Smith, K.L., "Confrontation: A New Dimension in Nutrition Counseling," Journal of the American Dietetic Association, July 1983, 83:34-38.

This article discussed the need of confrontation in nutrition counseling. The purpose of this discussion was to help the nutrition educator understand the nature and techniques of confronting and how to integrate them into overall counseling. Confrontation was to be both responsible and caring. The purpose of it was: 1) to help individuals recognize their manipulations and incongruent behavior patterns, 2) to assist in evaluating the consequences of maladaptive behavior, and 3) to help assume ownership of feelings and take responsibility for actions. It was stated that good confrontation promotes self-confrontation and corrective action. Failure permits the continuation of self-defeating or unreasonable behavior.

German, Mary J., Pearce, J., Wyse, B.W., Hansen, R.G., "A Nutrition Component for High School Health Education Curriculums," Journal of School Health, March 1981, 51:149-53.

This discussion of the research project conducted in northern Utah concerning the development, implement and evaluation of nutrition education components gave several methods to approach the nutrition field.

A series of pretest and posttests were administered to measure the success of the nutrition education. The result proved positive for nutrition education.

One technique mentioned was a computer program created at Utah State University which calculates INQ's (Index of Nutritional Quality) with the formula below and prints the INQ information in tabular and graphic form.

$$\text{INQ} = \frac{\text{Amount of a nutrient in a 1000 kcal food portion}}{\text{Human requirement of that nutriet per 1000 kcal}}$$

This computer program was effective in developing the nutrition education unit.

Educators need to be up to date with materials and technology available to aid in the educating of nutrition.

Huyck, Norma I., "Nutrition Services for Pregnant Teenagers," Journal of the American Dietetic Association, July 1976, 69:60-62.

The article discussed the role of nutrition for pregnant teenagers in a Maternity and Infant Care Project in Hartford, Connecticut. It stressed the importance of nutrition for the pregnant teenager, and the method used to provide the information. The MIC Project used a structured interview to obtain a complete nutritional history and assessment. It was determined that for best results, interviews should be on a one-to-one basis to provide the best framework and have a relaxed converstation with sufficient structure to reach a conclusion. It was concluded that Nutrition Services should provide information regarding the benefits of good nutrition and give ideas and alternatives to help the teenager obtain and maintain her nutritional health. Also, this article provides information concerning infant feeding along with suggestions and alternatives to meet the infant's nutritional needs.

Klein, Linda, "Working with Teenage Mothers," Food and Nutrition, October 1980, pp. 9-15.

"Teenage pregnancy. Some say it's epidemic." (p. 9) The introduction addressed the problem and continued with the importance of nutrition during adolescent pregnancy. Various examples were discussed which illustrated food and nutrition education programs helping teenagers reduce risks to themselves and their babies. WIC was considered one of the most helpful. In describing techniques of counseling, these suggestions were given: 1) use nontechnical terms, 2) try to keep meetings short, 3) use group and individual sessions, 4) try not to inundate with information, 5) evaluate each teenager for maturity of thinking process, 6) find out what the teenager already knows and begin there, 7) use repetition and follow up, 8) temper your remarks with understanding and concern, 9) establish trust, 10) be authoritative without being authoritarian, 11) teach them to reason for themselves and handle situations, 12) foster peer relationship, and 13) be aware of body language. It was noted that negative attitudes toward nutrition need to be resolved before the teen can be receptive to any knowledge.

Orr, Robin D., and Simmons, Jeanette J., "Nutritional Care in Pregnancy: The Patient's View," Journal of the American Dietetic Association, August 1979, 75:126-140.

Program I. "Amount, type and sources of dietary advice and treatment."

In this article the authors described the methodology used to collect data. It included the development of the patient interview from a population sample to gather information on: 1) patients' perception of need for nutritional advice, 2) source and nature of advice given and attitude of it, 3) dietary treatment reported by patient, 4) pattern and nature of dietitian contacts, 5) changes in dietary habits during pregnancy, 6) concern of diet during pregnancy, 7) satisfaction with amount of and type of information received, 8) demographic data, and 9) information on habits of food preparation and purchasing. It was noted that the main source of nutritional advice for patients was given by the dietitian, some additional advice by nurses, and a small amount from physicians.

Orr, Robin D., and Simmons, Jeanette J., "Nutritional Care in Pregnancy: The Patient's View," Journal of the American Dietetic Association, August 1979, 75:126-140.

Program II. "Perceptions, satisfaction, and response to dietary advice and treatment."

This section included tables with the responses listed for evaluation along with a description of the method used to analyze the results. The responses indicated that almost all subjects considered nutrition to be important during pregnancy. Most subjects were more satisfied with the amount than with the type of dietary advice received. Half of the subjects expressed negative attitudes toward nutrition services due to the feelings of guilt they experienced because of weight, food intake, or inability to adhere to advice.

Orr, Robin D., and Simmons, Jeanette, "Nutritional Care in Pregnancy: The Patient's View," Journal of the American Dietetic Association, August 1979, 75:126-140.

Program III. "Perceived need for advice and effectiveness of advice received."

It was concluded that dietary changes are more difficult to achieve than compliance to taking medication for help. Despite the strong belief of importance of nutrition, only half of the subjects perceived themselves as having a need for dietary advice during pregnancy. Those who perceived themselves as having no need were more likely to be underweight and have values in the low range. Those who expressed a desire or need for nutrition information were more likely to 1) seek nutrition service earlier in pregnancy, 2) make changes in their diets, and 3) have a more positive attitude toward nutrition.

Snowman, Margaret Knight, "Nutrition Component in a Comprehensive Child Development Program," Journal of the American Dietetic Association, February, 1979, 74:124-129.

Program II. "Nutrient Intakes of Low Income, Pregnant Women and the Outcome of Pregnancy."

The author described the procedure of obtaining a twenty-four hour food recall from pregnant teens. The food recall was then evaluated for nutritional value. Tables were available to compare the daily nutrient intakes of expectant teenagers using these categories: 1) race, 2) age, and 3) low or middle income level.

SPECIAL PROGRAMS WITH NUTRITION EDUCATION FOR THE PREGNANT ADOLESCENT

The purpose of special programs for pregnant adolescents is not to isolate them from friends or peers but to approach their educational needs in a manner that will be more applicable to them. Students are more interested in learning if it is a subject that pertains to their lives and their interests.

Alton, Irene R., "Nutrition Services for Pregnant Adolescents Within a Public High School," Journal of the American Dietetic Association, June 1979, 74:667-669.

Alton gave the background of MIC (Maternal and Infant Care) project that was offered in the St. Paul, Minnesota school system. MIC offered a broader scope of protective, health care services as well as a strong educational component. The program included day care services, prenatal care, referral to the Project's teen birth control clinic, and well child care. Nutrition services were given a high priority by the MIC project. Nutrition problems relating to family planning, weight control, and the importance of nutrition for future planned pregnancies were emphasized.

Dohrman, Harriet, "Nutrition Education in the Santa Ana Teen Mother Program," Journal of the American Dietetic Association, June 1979, 74:665-667.

The Teen Mother Program in Santa Ana, California, was described and discussed emphasizing the need and importance of nutrition. The program consisted of four sections: 1) home economics area, 2) academic classroom, 3) business education and career center, and 4) infant center. Nutrition education was presented in various ways. The most effective methods in teaching and changing nutritional behavior were two projects--the lunch program, which allowed girls the planning and preparing of meals, and the Mother's Cafe, which taught skills for cashier, hostess, waitress, bus girl, clean-up girl, and cook.

Carte, Elizabeth, Education for School-Age Parenting, Educational Resources Information Center, ED 138 716, Norwalk, CT, 1976, pp. 32-184.

This was the final report of the pilot project developed to provide information for pregnant girls in Norwalk, Connecticut. It described the techniques used to develop an understanding of foods and health, with some emphasis on maternal and infant well-being. The section on nutrition (pp. 32-184) contained an abundance of activities and strategies to be used for a total nutritional curriculum. However, the majority of the information was general, with little mention of nutrition related to pregnancy.

Frankle, Reva T., and Owen, Anita Y., Nutrition in the Community, The C.V. Mosby Company, St. Louis, MO, 1978, pp. 109-111.

Confronting the problem of increased number of infants born to adolescent girls, State and Federal governments are developing various programs to help the nutritional aspects of the problem. Examples were given of some of these programs: 1) special schools for pregnant girls, 2) nutritional services in prenatal clinics, and 3) WIC programs. Also, since pregnant students are allowed to continue in most schools, "multidisciplinary programs" have been established. These programs could include: 1) Prenatal care, 2) psychological counseling, 3) home economics education, 4) academic education, and 5) nutrition information.

Hansen, Christian M.; Brown, Myrtle; and Trontell, Marie, "Effects on Pregnant Adolescents of Attending a Special School," Journal of the American Dietetic Association, June 1976, 68:538-541.

A study was conducted in the Family Learning Center, a special school in New Brunswick, New Jersey, which investigated the nutritional status of twenty-nine pregnant girls and compared the data with similar studies. The method of collecting data was described and the findings were analyzed.

It was stated that the girls attending the center prepared their lunches at school, and that fruit and milk were available for snacks throughout the day.

The outcome of pregnancies of this group was only one infant born with a birth weight less than 2500 grams (5 lbs., 8 oz.). When compared with similar studies, the special school had a lower incidence of low birth weight infants born to teenagers.

McPherson, Elizabeth P.; Sumna, Sheron K.; and Clawson, Barbara N., "Project Teen," Community Nutritionist, July/August 1983, pp. 14-16.

The article described a school-based community approach to health and nutrition for students at the middle school level called "Project TEEN." It was a three year longitudinal study implemented in a small rural community in North Carolina. The project was evaluated and proved to be a success. The article emphasized the effect total involvement of community and school can have on students nutritional behavior.

Parrott, Kathy, Director and Teacher of Teen-Age Parent Program, Elkhart, Indiana. Interviewed March 12, 1984.

In interviewing Kathy Parrott, director and teacher of the TAPP program, she explained the program and the nutritional components of it. Nutrition was included in these three areas: 1) prenatal care, 2) child care, and 3) coping skills. The prenatal unit included approximately two weeks of nutrition. Students ranged from seventh to twelfth grade levels. Lots of various teaching aids were used for group and individualized instruction. Ms. Parrott stated that she believed the TAPP program was very effective in helping teenagers--male and female--both physically and physiologically.

Register, Ann, and King, Frances, "Helping Teenage Parents Grow Up," VocEd, December 1978, pp. 27-29.

Register and King related the development of school programs to help the teenage parent in the state of Georgia. The programs proved to be very successful in helping teens since they provided educational material addressed toward the needs of the students. Some classes in the elementary and middle schools were developed to aid in the teaching of pertinent information on nutrition, consumerism, and human physiology. Therefore, the comprehensive program was available for students K-12.

Serrano, Tina, "Teaching the Kids: From Preschool to High Schoolers," Food and Nutrition, December 1979, pp.16-17.

The NET (Nutrition Education and Training) program was introduced by a school home economist. She began the program with a weight-loss class which was an elective open to all students. After its success, she was able to sell the concept of including nutrition education in every core class. Examples were: 1) math classes studied the Recommended Daily Allowances, 2) geography classes read about world health and cultural eating patterns, 3) English classes wrote papers about food choices and discussed restaurant menus, and 4) science classes burned lunches to find calorie content. There were encouraging signs of change in attitudes and eating habits due to this program.

Sung, Kyu-Taik, and Rothrock, Dorothy, "An Alternate School for Pregnant Teenagers and Teenage Mothers," Child Welfare, July/August 1980, pp. 427-435.

The article outlined a model program of continuing education for young women in Kalamazoo, Michigan. The program met the special needs of the pregnant teenager or teenage parent who wished to continue her education. The program was part of the public school system, but in a separate building. Services for pregnant girls from seventh through twelfth grades were available. The average duration was seven months but ranged from one to fourteen months. The short-term goals of the program were to increase education level and decrease incidence of repeated pregnancies. Long-term goals were to develop nurturing and parenting skills and facilitate normal growth and development of the participants' children. There were arguments against the school, but the advantages outweighted the disadvantages.

EVALUATION OF NUTRITION EDUCATION

Several of the preceding annotations contained evaluating analysis of nutrition education. However, the following bibliography deal primarily with evaluation.

Dwyer, Johanna T.; Stolurow, K.A.; and Orr, Robin, "A Nutrition Knowledge Test for High School Students," Journal of Nutrition Education, September 1981, 13:93-94.

Approximately ten years ago, a nutrition knowledge assessment instrument was developed because of identified need. The test was designed around basic nutritional concepts needed for wise food selection. However, after the test was designed, developed and evaluated, many of the items were eliminated, based on difficulty, poor discrimination, and factor analysis.

Consequently, when attempting to construct a valid nutrition knowledge instrument, one must work closely with content experts and measurement experts and be sure the material is as current as possible, since nutrition is an ever-changing field.

Hertzler, Ann A., and Vaughan, Edwin O., "The Relationship of Family Structure and Interaction to Nutrition," Journal of the American Dietetic Association, January 1979, 74:23-27.

This was a review of research which illustrated the relationship of family characteristics to food habits and nutritional status. It dealt with the structure and demographic characteristics of family interaction. Research indicated that malnourished children usually come from larger families with more illnesses, inadequate finances, and lower educational levels. Mothers of malnourished children are of lower average weights, have frequent pregnancies which began at an early age, have poorer diets and have a higher rate of illegitimacy. Better nutritional status was possible with these conditions: 1) a husband present, 2) a stable marital relationship, 3) quality time spent as a family unit for eating and communicating, and 4) parents' agreement on child-rearing habits.

Perkins, Judy, "Evaluating a Nutrition Education Program for Pregnant Teenagers: Cognitive vs. Behavioral Outcomes," Journal of School Health, September 1983, 53:420-22.

After a manual-based program of nutrition education for pregnancy was administered to a group of nineteen teenagers who were pregnant or had just recently had a baby, the evaluation was favorable in the area of knowledge attained, but showed very little change in the area of improved eating habits.

There was an above average consumption of citrus due to a snack program that was introduced by the school nurse and the school's installation of a vending machine for fruits. Also, the school allowed these snack items into the girls' classroom.

The study indicated that a judgement of nutrition education effectiveness cannot be based on cognitive testing alone. However, desirable environmental support, along with nutrition knowledge, results in better behavior outcomes.

Rosander, Karin, and Sims, Laura S., "Measuring Effects of an Affective-Based Nutrition Education Intervention," Journal of Nutrition Education, September 1981, 13:102-105.

A study conducted on participants of a WIC program in central Pennsylvania was evaluated to measure the effects of affective-based nutrition education. The intervention consisted of three nutritional lessons promoting improvement of attitudes. Then an attitude assessment instrument was developed to measure the effectiveness of the program.

The results were favorable for the effects of this form of nutrition education. There was a definite improvement in participants' nutritional attitudes and dietary scores. Therefore, an educator of nutrition must try to use an affective as well as cognitive-based approach to improve participants' dietary knowledge and behavior, since it seems to have a greater effect.

SUMMARY

According to statistics and pertinent facts presented by the March of Dimes and Planned Parenthood, we can see that adolescent pregnancies are a prevalent nutritional problem. Dohrmann stated that pregnant teenagers are mentally, nutritionally, and socially at risk. Hess, Frischano, and Lee, as well as others, stressed the fact that adolescence and pregnancy require great nutritional demands on the pregnant teenager. These demands can be determinant in the outcome of pregnancy and offspring.

In spite of importance of improving dietary habits, adolescents are difficult to interest in nutrition, since the word "nutrition" often connotes a boring subject or a negative attitude. This problem contributes to the delay in seeking prenatal care in pregnancy. (Wallace, 1982; Stuart, 1982) Birth weight of infants has been found to be related to the trimester of pregnancy in which prenatal care began (Chilman, 1980). Therefore, it is no surprise that the adolescent is at a much higher risk for producing a low birth weight infant. Consequently, low birth weight contributes to a number of complications, such as a higher percentage of infant deaths, birth defects and lower IQs. (Hess 1982; Guttmacher Institute 1981)

Lifelong good health and nutritional habits are the best biologic preparation for successful childbearing. However, the adolescents who become pregnant in teen years are often the ones who have not experienced good dietary behavior for one reason or another. It becomes the job of an educator to help the individual understand

her changing nutritional needs, the choices she has for meeting them, the distractions she may encounter and the long-term effects of her dietary habits.

An educator has a variety of resources available to assist in the providing of information, ideas, and alternatives which can help the adolescent develop a positive attitude toward nutrition and obtain and maintain good nutritional status.

We can measure the attainment of nutritional information by test and other instruments easily, but it is difficult to measure the effect of nutrition education on dietary behavior. Special programs, surveys, and research have evaluated diet recalls and noted the outcome of pregnancies. Improved nutritional habits resulted in healthy babies and reduced incidence of premature, underweight babies. (Dohrmann, 1979)

CONCLUSIONS

The research clearly indicated the importance of nutrition education for the pregnant adolescent. Out of the increasing number of teenage parents comes the increasing need for more effective nutrition instruction. Our next generation's quality of health depends on the nutritional status of today's pregnant mothers. Aware of this fact, schools, federal, state, and local governments, parents, media, health and social agencies, and others are providing nutritional services for young mothers. However, not all these have been as effective as desired. Continued research, development and training needs to be done to improve the quality of nutrition education for the pregnant adolescent.

BIBLIOGRAPHY

Alton, Irene R., "Nutrition Services for Pregnant Adolescents Within a Public High School," Journal of the American Dietetic Association, June 1979, 74:667-669. (24)

Am I Pregnant?, The National Foundation March of Dimes, 1978, Set of fifteen 8" by 10" cards. (14)

Anderson, Marcy L.F.; Olson, Christine M.; and Rhodes, K., "Development and Pilot Testing of a Tool for Evaluating Printed Materials," Journal of Nutrition Education, 1980, 12:50-54. (12)

Arnold, Justin, Nutrition: Yesterday, Today and Tomorrow. New Horizons in Nutrition. Educational Resources Information Center, ED 193 186, Kingston, PA, 1980. (14)

Axelson, Julein M., and Delcampo, Diana S., "Improving Teenagers Nutrition Knowledge Through the Mass Media," Journal of Nutrition Education, January-March 1978, 10:30-33. (20)

The Bank Street College of Education, Days of Change, The National Foundation March of Dimes, 1978, 32 pp. (14)

The Bank Street College of Education, Inside Your Body, Inside Your Head, The National Foundation March of Dimes, 1978, 32 pp. (15)

The Bank Street College of Education, Food for Thought and Eating, The National Foundation March of Dimes, 1978, 32 pp. (15)

The Bank Street College of Education, The Junk Food Blues, The National Foundation March of Dimes, 1978, 32 pp. (15)

Bowering, J.; Lowenberg, R.L.; and Morrison, M.A., "Nutritional Studies of Pregnant Women in East Harlem," American Journal of Clinical Nutrition, September 1980, 33:1987-1996. (6)

Burrill, Sally L., and Hall, Mary E., Nutrition for a Healthy Pregnancy, Cooperative Extension Service, University of California, (EFNEP 5207), 64 pp. (15)

Camp, Bonnie W., and others, "Infants of Adolescent Mothers," American Journal of Diesease of Children, March 1984, 138:243-246. (6)

Carta, Elizabeth, Education for School-Age Parenting, Educational Resources Information Center, ED 138 716, Norwalk, CT, 1976, pp. 32-184. (24)

Chilman, Catherine S., Adolescent Pregnancy and Childbearing, United State Department of Health and Human Services, Government Printing Office, Washington, D.C., NIH Publication No. 81-2077, December 1980. (7, 29)

Cowart, Eileen, and Liston, Walter, For the Young Mother-to-be, Mead Johnson and Company, Evansville, IN, 1978, 20 pp. (15)

Dohrmann, Harriet, "Nutrition Education in the Santa Ana Teen Mother Program," Journal of the American Dietetic Association, June 1979, 74:665-667. (24, 30)

Dohrmann, Harriet, You Are Pregnant! Food for Two, Educational Resources Information Center, ED 194 851, Orange, CA, 1980. (16, 29)

Dwyer, Johanna T.; Stolurow, K.A.; and Orr, Robin, "A Nutrition Knowledge Test for High School Students," Journal of Nutrition Education, September 1981, 13:93-94. (27)

Eisner, Victor, and others, "The Risk of Low Birthweight," American Journal of Public Health, September 1979, 69:887-8893. (7)

Engen, Harold B; Vailas, Laura I.; and Smith, K.L., "Confrontation: A New Dimension in Nutrition Counseling," Journal of the American Dietetic Association, July 1983, 83:34-38. (20)

Eppright, Ercel; Pattison, Mattie; and Barbour, Helen, Teaching Nutrition, Iowa State University Press, Ames, Iowa, 1978, 345 pp. (12)

Facts You Should Know About Teenage Pregnancy, The National Foundation March of Dimes, White Plains, NY, 1983, 1 p., mim. (1)

Fast Food: A Nutrition Survival Guide, The Learning Seed Company, Kildeer, IL, 1981, filmstrip and tape cassette, 66 frames, 15 minutes. (16)

Food Power, The National Foundation March of Dimes, 1978, set of fifteen 8" by 10" cards. (16)

Frankle, Reva T., and Owen, Anita Y., Nutrition in the Community, The C.V. Mosby Company, St. Louis, MO, 1978, pp. 109-111. (25)

Frischano, A. Roberto; Matos, Jorge; and Flegel, Pam, "Maternal Nutritional Status and Adolescent Pregnancy Outcome," The American Journal of Clinical Nutrition, November 1983, 38:739-745. (2, 7, 29)

Garn, Stanley M. and LaVelle, Marquisa, "Reproductive Histories of Low Weight Girls and Women," The Journal of Clinical Nutrition, May 1983, 37:862-866. (8)

German, Mary J.; Pearce, J.; Wyse, B.W.; and Hansen, R.G., "A Nutrition Component for High School Health Education Curriculums," Journal of School Health, March 1981, 51:149-53. (21)

Gots, Ronald E. and Gots, Barbara A., Caring for Your Unborn Child, Stein and Day, New York, NY, 1977, pp. 59-94. (12)

Hansen, Christian M.; Brown, Myrtle; and Trontell, Marie, "Effects on Pregnant Adolescents of Attending a Special School," Journal of the American Dietetic Association, June 1976, 68:538-541. (25)

Hemmerich, Cecilia A., and others, Teaching Teens "Stuff" That Counts. A Guide for Volunteers, Educational Resources Information Center, Madison, WI, ED 092 784, 1973. (16)

Hertzler, Ann A., and Vaughan, Edwin C., "The Relationship of Family Structure and Interaction to Nutrition," Journal of the American Dietetic Association, January 1979, 74:23-27. (27)

Hess, Mary A., and Hunt, Anna E., Pickles and Ice Cream, McGraw-Hill Book Company, New York, NY, 1982, 256 pp. (3, 13, 29)

Huyck, Norma I., "Nutrition Services for Pregnant Teen-agers," Journal of the American Dietetic Association, July 1976, 69:60-62. (3, 21)

Iams, Jay D., Being Well Born: Preventive Health Practices in Pregnancy and Delivery, Educational Resources Information Center, ED 214 631, 1982. (8)

Indiana Council on Adolescent Pregnancy, Adolescent Pregnancy and Parenting Services: Indiana Resource Directory, Indianapolis, IN, March 1983. (13)

Inside My Mom: Nutrition During Pregnancy, The Puget Sound Chapter of the National Foundation March of Dimes, Seattle, WA, 1975, set of slides and one tape cassette. (17)

Klein, Linda, "Working With Teenage Mothers," Food and Nutrition, October 1980, pp. 9-15. (22)

Lansky, Vicki, Feed Me I'm Yours, Meadowbrook Press, Wayzata, MN, 1974, pp. 116. (17)

Lee, Essie E., "Food Fads, Nutrition and Teenage Mothers," Childhood Education, January 1977, 53:143-146. (3, 9, 29)

Lindsay, Jeanne W., Teens Parenting: The Challenge of Babies and Toddlers, Educational Resources Information Center, ED 203 993, 1981. (17)

Lindsay, Jeanne W., Teens Parenting: The Challenge of Babies and Toddlers. Student Study Guide, Educational Resources Information Center, ED 203 995, 1981. (17)

Lindsay, Jeanne W., They'll Read if it Matters: Study Guides for Books About Pregnancy and Parenting, Educational Resources Information Center, ED 186 121, 1980. (18)

McPherson, Elizabeth P.; Sumna, Sheron K.; and Clawson, Barbara N., "Project Teen," Community Nutritionist, July/August 1983, pp. 14-16. (25)

Nye, F. Ivan, School-Age Parenthood: Consequences for Babies, Mothers, Fathers, Grandparents, and Others, Extension Bulletin 667, Cooperative Extension Service, Washington State University, 1977. (9)

Orr, Robin D., and Simmons, Jeanette J., "Nutritional Care in Pregnancy: The Patient's View," Journal of the American Dietetic Association, August 1979, 75:126-140. (22, 23)

Parrott, Kathy, Director and Teacher of Teen-Age Parent Program, Elkhart, Indiana. Interviewed, March 12, 1984. (25)

Perkins, Judy, "Evaluating a Nutrition Education Program for Pregnant Teenagers: Cognitive vs. Behavioral Outcomes," Journal of School Health, September 1983, 53:420-422. (28)

Register, Ann, and King, Frances, "Helping Teenage Parents Grow Up," VocEd, December 1978, pp. 27-29. (26)

Rosander, Karin, and Sims, Laura S., "Measuring Effects of an Affective-Based Nutrition Education Intervention," Journal of Nutrition Education, September 1981, 13:102-105. (28)

Serrano, Tino, "Teaching the Kids: From Preschool to High Schoolers," Food and Nutrition, December 1979, pp. 16-17. (26)

The Special Problem of Adolescent Pregnancy, Planned Parenthood of Central Indiana, Elkhart, IN, n.d., 1 p., mim. (1, 2)

Snowman, Margaret Knight, "Nutrition Component in a Comprehensive Child Development Program," Journal of the American Dietetic Association, February 1979, 74:124-129. (23)

Stuart, Irving R., and Wells, Carl F., Pregnancy in Adolescence: Needs, Problems and Management, Van Nostrand Reinhold Company, New York, NY, 1982, pp. 66-68, 70-72. (9, 29)

Sung, Kyu-Taik, and Rothrock, Dorothy, "An Alternate School for Pregnant Teen-agers and Teen-age Mothers, Child Welfare, July/August 1980, pp. 427-435. (26)

Teen-age Pregnancy: The Problem That Hasn't Gone Away, The Alan Guttmacher Institute, New York, NY, 1981, 80 pp. (1, 10, 29)

United States Department of Health and Human Services, Food for the Teenager During and After Pregnancy, Superintendent of Documents, United States Government Printing Office, Washington, D.C., Publication No. (HRSA) 82-5106, 1982, 31 pp. (18)

United States Department of Health, Education and Welfare, Food for the Teenager During Pregnancy, Public Health Service, Pamphlet No. (HSA) 78-5106, Washington, D.C., 1978. (18)

Wallace, Helen M.; Weeks, John; and Medina, Antonio, "Services for Pregnant Teenagers in the Larger Cities of the United States, 1970-1980," JAMA, November 12, 1982, 248:2270-2273. (2, 10, 29)

Williams, Phyllis S., Nourishing Your Unborn Child, Avon Books, New York, NY, 1974, 275 pp. (13)

Working Group on Nutrition and Pregnancy in Adolescence, "Relation of Nutrition to Pregnancy in Adolescence," Clinical Obstetrics and Gynecology, June 1971, pp. 367-392. (10)

Worthington, Bonnie S.; Vermeersch, Joyce; and Williams, Sue R., Nutrition in Pregnancy and Lactation, The C.V. Mosby Company, St. Louis, MO, 1977, pp. 119-131. (13)

Your Month-By-Month Pregnancy Diet, The National Foundation March of Dimes, 1978, set nine 8" by 10" cards. (19)

Zlatnik, Frank J. and Burmeister, Leon F., "Low 'Gynecologic Age': An Obstetric Risk Factor," American Journal of Obstetrics and Gynecology, May 1977, 128:183-186. (11)